(2) applying a voltage across the VCSEL's active region so as to alter the optical power circulating in the VCSEL's cavity, whereby to increase or decrease the output power of the VCSEL.

Remarks

In the outstanding Official Action, the Examiner rejected claims 1 and 2 under 35 USC 102(e) as being anticipated by Kullander-Sjoberg et al.

In response, Applicants have now amended independent claim 1 so as to more clearly define the present invention with respect to the prior art of record.

Independent claim 1 comprises a method for modulating the output of an optically pumped, tunable VCSEL, wherein the method comprises the steps of optically pumping the VCSEL with a pump laser so as to cause the VCSEL to generate a first output having an output power greater than zero, and modulating the output light power of the pump laser so as to modulate the carrier population in the VCSEL's active region, whereby to modulate the first output of the VCSEL to a second output having an output power greater than zero.

Applicants believe that Kullander-Sjoberg et al. disclose a pump VCSEL operating at 980 nm, which acts as an optical pump to create a population inversion at the active layer of a main

VCSEL, and the main VCSEL is modulated by using an external electrical field applied perpendicular to the active layer of the main VCSEL. At column, lines 48-50, Kullander-Sjoberg et al. states "the optical output will therefore be modulated by the electric field and not as by injected carriers." It is Applicants' belief that this operation of Kullander-Sjoberg et al. teaches away from the method of claim 1 of the present invention in that the present invention comprises the step of modulating the output light power of the pump laser so as to modulate the carrier population in the VCSEL's active region, whereby to modulate the first output of the VCSEL to a second output power greater than zero. Applicants further believe that Kullander-Sjoberg et al. disclose that the main VCSEL is modulated from a first output power greater than zero to a second output power greater than zero using an electrical field applied perpendicular to the active layer and the optical output will therefore be modulated by the electrical field and not as by injected carriers. Accordingly, Applicants believe that claim 1 is in condition for allowance, and allowance thereof is respectfully requested.

Independent claim 2 of the present invention comprises a method for modulating the output of an optically pumped, tunable VCSEL. This method comprises the steps of optically pumping the

VCSEL with a pump laser so as to cause the VCSEL to generate an output; and (2) applying a voltage across the VCSEL's active region so as to alter the optical power circulating in the VCSEL's cavity, whereby to increase or decrease the output power of the VCSEL. It is Applicants' belief that Kullander-Sjoberg et al. discloses a VCSEL designated to resonate at a given wavelength. Applicants have carefully reviewed Kullander-Sjoberg et al. and further believe that Kullander-Sjoberg et al. does not disclose a method for modulating the output of an optically pumped, tunable VCSEL comprising the step of applying a voltage across the VCSEL's active region so as to alter the optical power circulating in the VCSEL's cavity, whereby to increase or decrease the output power of the VCSEL. Accordingly, reconsideration of claim 2 is respectfully requested.

In the event that any fees may be required in this matter, please charge the same to Deposit Account No. 16-0221.

Respectfully submitted,

James A. Sheridan 5/27/03

James A. Sheridan
Registration No. 43,114
Pandiscio & Pandiscio
470 Totten Pond Road
Waltham, MA 02451-1914
Tel. (781) 290-0060

TS/CORE57.AMD